



SRI RAAJA RAAJAN
COLLEGE OF ENGINEERING AND TECHNOLOGY
(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

COURSE SYLLABUS :: 2017-2018

COURSE OBJECTIVES:

The objectives of the course are to

- The trainee should be able to develop programming solutions using Python.
- The trainee will have a good understanding of machine learning concepts.
- Trainees will be able to build various Bayesian models and mixture models comprising of both real and discrete valued data.

COURSE OUTCOMES:

At the end of the course the students will be able to

- Trainees will be proficient in text mining, information retrieval and extraction.
- Trainees will be proficient in fundamental neural network architecture.

COURSE SYLLABUS:

1. Introduction to Artificial intelligence.

2. Learning Techniques

- > Basics of Deep Learning techniques
- > Understanding artificial neural networks
- > Training a neural network using the training data
- > Convolutional neural networks and its applications
- > TensorFlow and Tensor processing units
- > Supervised and unsupervised learning methods
- > Real-world projects in recommender systems, etc.

3. Machine Learning

- Supervised Learning
- Unsupervised Learning
- Ensemble Techniques
- Featurization, Model Selection & Tuning
- Recommendation System

4. Artificial Intelligence

- Introduction to Neural Networks and Deep Learning
 - **Computer Vision**
 - Natural Language Processing
-
- EDA
 - Time Series Forecasting
 - Pre Work for Deep Learning
 - Model Deployment
 - Visualization using Tensor board




PRINCIPAL
Sri Raaja Raajan College of Engg. & Tech.
Amaravathipudur, Karaikudi - 630 301
Sivagangai Dist. Tamil Nadu



SRI RAAJA RAAJAN
COLLEGE OF ENGINEERING AND TECHNOLOGY
(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
BASICS OF C, C++ PROGRAMMING
COURSE CONTENT :: 2018-2019

OBJECTIVE OF THE COURSE:

C and C++ Programming are must to learn for every one who are interested in programming and want to start their career in software industry. It is the basic foundation of any programming languages. All the programming languages like java, c# or any object oriented programming language are all inherited from c and c++.

In this course you will learn all the basic fundamentals of c and c++ from scratch then proceed to advanced topics.

LEARNING OUTCOME:

After the completion of the course, the students will be work and process with various source of images.

After competing this course, you will be able to:

- Describe OOPs concepts
- Use functions and pointers in your C++ program
- Understand tokens, expressions, and control structures
- Explain arrays and strings and create programs using them
- Describe and use constructors and destructors
- Understand and employ file management
- Demonstrate how to control errors with exception handling

DURATION OF THE COURSE:

❖ 4 Days

MINIMUM ELIGIBILITY CRITERIA:

- ❖ Academic and un-academic students with basic C,C++ knowledge.

COURSE OUTLINE

1. Exploring Programming Basics and OOPs Concepts
2. Introducing C,C ++ Programming
3. Working with Tokens, Expressions and Control Structures in C,C++
4. Managing Input and Output Data
5. Arranging the Same Data Systematically: Arrays
6. Classes and Objects in C,C++
7. Implementing OOPs Concepts in C++
8. Constructors and Destructors
9. Groups of Statements: Functions
10. Implementing Structures and Unions
11. Pointing to a location: Pointers
12. File Management in C,C++
13. Templates in C,C++
14. Handling Exceptions in C,C++
15. Manipulating Strings in C,C++
16. Working with Pre-processor Directives
17. Advanced Labs

DETAILED COURSE SYLLABUS:

Module 1: C++ overview

Module 2: Functions and variables

Module 3: Classes in C++

Module 4: Operator overloading

Module 5: Initialization and assignment

A brief explanation of the C, C++ course syllabus, all modules mentioned below:

Module 1:

- Object-oriented Fundamentals

- Programming Paradigms
- Conquering Complexity

C,C++ Basics

- Comments, Keywords, I/O Streams
- Built-in operators and control constructs
- Built-in types, Arrays, and pointers
- Dynamic Free Store operators

C,C++ Functions

- Definition and prototypes
- Inline Functions

- Structures and References

Module 2:

Encapsulation

- Private and Public
- Data Members, Member Function

Constructors and Destructors

- Default Arguments
- Storage Allocation and Deallocation
- Copy Constructors
- This Pointer

Module 3:

Overloading

- Overloading Operators
- Overloading Functions
- Unary and Binary OperstorsA
- Stream Input and Output
- Initialization vs. Assignment

Module 4:

Polymorphic programming

Inheritance

- Public inheritance and subtyping
- Constructors and destructors
- Base and derived classes
- Base class initialization
- Using protected keyword

Virtual functions

- Base class pointers and references

Dynamic Binding

- Pure virtual functions
- Abstract base classes
- Virtual destructors

Module 5:

Code reuse in C,C++

Private inheritance

- Access declarations
- Base and derived relationship

- Containment

- Member Initialization
- Objects as data members



A handwritten signature in green ink, appearing to be "Sri Raaja Raajan".

PRINCIPAL

Sri Raaja Raajan College of Engg. & T
Amaravathipudur, Karaikudi - 630
Sivagangai Dist. Tamil Nadu



SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Anna University)

148- 481, Amarasathi Village,
Amarasathipudur (Po.),
Karaikudi - 630 301.
Ph : 04565 - 234230 / 326132

Fax : 04565 - 234430
Mobile : 73737 11322, 73737 11333
E-mail : srrcet2010@gmail.com
Website : www.raajaraajan.org

DEPARTMENT OF COMPUTERSCIENCE & ENGINEERING

BASICS OF ROBOTICS

COURSE CONTENT:: 2019-2021

OBJECTIVE OF THE COURSE:

Robotics develops machines that can substitute for humans and replicate human actions. Robots can be used in many situations for many purposes, but today many are used in dangerous environments (including inspection of radioactive materials, bomb detection and deactivation), manufacturing processes, or where humans cannot survive (e.g. in space, underwater, in high heat, and clean up and containment of hazardous materials and radiation).

LEARNING OUTCOME:

After the completion of the course, the students will be able to design some robots.

DURATION OF THE COURSE:

❖ 6 Days (45 Hours)

MINIMUM ELIGIBILITY CRITERIA:

❖ Pursuing BE Students

COURSE OUTLINE

SL.No.	ModulestobeCovered
1	Automation
2	Fundamentals of Robots
3	Introduction to Robot End Effectors, Sensors and Control System
4	Robot Programming and Applications
5	Intelligent Robots and Lab work
6	Project

Trust Office : No. 1, S.K.M. Building, T.T. Nagar Ist Street, Karaikudi - 630 001.

Ph : 04565 - 234230, Mobile : 73737 11331, 73737 11338



SRI RAAJA RAAJAN COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Anna University)

146 /4B1, Amaravathi Village,
Amaravathipudur (Po.),
Karaikudi - 630 301.
Ph : 04565 - 234230 / 326132

Fax : 04565 - 234430
Mobile : 73737 11322, 73737 11333
E-mail : srreet2010@gmail.com
Website : www.raajaraajan.org

DETAILED COURSE SYLLABUS:

1. Automation

- ❖ MechanizationAutomationHistory of Automation
- ❖ Reasons for automationMerits and limitationsAutomation systems
- ❖ Types of AutomationProgrammable Automation
- ❖ Intelligent Industrial AutomationAutomation and Robotics.

2.Fundamentals of Robots

- ❖ Definition of Fundamentals of RobotsHistorical background
- ❖ Various generations of robotsRobotAnatomy
- ❖ Robot configurationJoint-armconfiguration
- ❖ Degree of freedomWork volume and Dead zone
- ❖ Dynamic performanceSpeed of response and Stability
- ❖ Precision of movementSpatial Resolution & Accuracy
- ❖ Repeatability and Compliance

3. Introduction to Robot End Effectors, Sensors and Control System

- ❖ Introduction to Robot End EffectorsEnd Effectors
- ❖ Characteristics & FeaturesMechanical grippers
- ❖ Magnetic grippersAdhesive gripper
- ❖ Vacuum cupsHooks and Scoops
- ❖ Tools as end effectorsRobot / End-effectors interface
- ❖ Consideration in Gripper selection and Design

4. Robot Programming and Applications

- ❖ Robot ProgrammingTexturai Programming
- ❖ Requirements of robot programming language
- ❖ Problems pertaining to robot programming languagesAnalysis the problems
- ❖ Common languagesSoftware details
- ❖ Robot programsRobot program as a path in space
- ❖ Factors influencing the selection of RobotsRobots for Materials handling
- ❖ Assembly, Agriculture and Chemical PlantsAdvanced applications

5. Intelligent Robots and Lab work

- ❖ Intelligent RobotsIntroduction to Mobile Robots
- ❖ Legged Robots and Remote Controlled RobotsAutomated Guided Robots
- ❖ Micro RobotsControl and Safety Issues

6. Project

Trust Office : No. 1, S.K.M. Building, T.T. Nagar Ist Street, Karaikudi - 630 001.

Ph : 04565 - 234230, Mobile : 73737 11331, 73737 11338


PRINCIPAL

Sri Raaja Raajan College of Engg. & Tech.
Amaravathipudur, Karaikudi - 630 301
Sivagangai Dist. Tamil Nadu



SRI RAAJA RAAJAN

COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, New Delhi & Affiliated to Anna University)

146-3891, Amarasathi Village,
Amarasathipudur (Po.),
Kannur - 670 701.
Ph - 04968 - 244750, 226132

Fax : 04565 - 234430
Mobile : 73737 11322, 73737 11333
E-mail : srrect2010@gmail.com
Website: www.raajamajan.org

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CLOUD COMPUTING TECHNOLOGIES :: 2021-22

COURSE CONTENT

COURSE OBJECTIVES:

- The skill competition is intended to reflect international best practice as described by the WSSS, and to the extent that it is able to. The Standards Specification is therefore a guide to the required training and preparation for the skill competition.
- In the skill competition the assessment of knowledge and understanding will take place through the assessment of performance. There will only be separate tests of knowledge and understanding where there is an overwhelming reason for these.

COURSE OUTCOMES:

- Evaluate, select and implement foundational cloud computing services such as compute, network, and storage.
- Evaluate, select and implement advanced cloud computing services such as managed data services, caching services, and automated scaling and availability features.
- Evaluate, select and implement various network-related technologies to infrastructure design such as network communication protocols, sub netting, NAT, DNS, VPN, broadcast networking, and dynamic routing protocols.

1. Introduction to Cloud Computing

Defining cloud computing

- Components of a computing cloud
- Differentiating types of clouds: public, private, hybrid

Delivering services from the cloud

- Categorizing service types
- Comparing vendor cloud products: Amazon, Google, Microsoft and others

2. Adopting the Cloud

Key drivers of cloud computing solutions

- Instantaneous provisioning of computing resources
- Tapping into an infinite storage capacity
- Cost-effective pay-as-you-use billing models

Evaluating barriers to cloud computing

- Handling sensitive data
- Aspects of cloud security
- Assessing governance solutions

3. Exploiting Software as a Service (SaaS)

Characterizing SaaS

- Streamlining administration with centralized installation
- Optimizing cost and performance with scale on demand

Comparing service scenarios

- Improving collaboration with business productivity tools
- Simplifying business process creation by integrating existing components

Inspecting SaaS technologies

- Deploying web applications
- Implementing web services: SOAP, REST
- Choosing a development platform

4. Delivering Platform as a Service (PaaS)

Exploring the technical foundation for PaaS

- Specifying the components of PaaS
- Analyzing vendor PaaS provisions
- Selecting an appropriate implementation

Building services with solution stacks

- Evaluating the architecture of vendor-specific platforms
- Becoming familiar with service platform tools

Managing cloud storage

- Controlling unstructured data in the cloud
- Deploying relational databases in the cloud
- Improving data availability

Employing support services

- Testing in the cloud
- Monitoring cloud-based services
- Analyzing portability across platforms

5. Deploying Infrastructure as a Service (IaaS)

Enabling technologies

- Scalable server clusters
- Achieving transparency with platform virtualization
- Elastic storage devices

Accessing IaaS

- Provisioning servers on demand
- Handling dynamic and static IP addresses
- Tools and support for management and monitoring



PRINCIPAL

Sri Raaja Raajan College of Engg. & T.
Amaravathipudur, Karaikudi - 630 30
Sivagangai Dist. Tamil Nadu